

REMARKS

Applicant's after-final amendment filed February 27, 2006, has not been entered, and the finality of the rejection of the last action is withdrawn. Claims 1-28 as presented in the amendment filed October 11, 2005, are pending in the application.

By this amendment, claims 1-8 are cancelled, claims 9-26 are withdrawn, claim 27 is cancelled, claim 28 is amended and new claims 29-33 are added. Hence, claim 28-33 remain for the Examiner's further consideration.

Claim 28 calls for an injection blow molding machine having a turret with at least three planar faces, each face carrying at least one hollow core rod. The turret is rotatable to present each face, successively, at a plurality of stations to form, at one of the stations, a preform on the at least one core rod at the said one of the stations, and then to form, at a successive one of the stations, a blown article from the preform, and apparatus for cooling the at least one core rod at the said one of the stations. Such apparatus comprises a source of compressed air, means for conditioning compressed air from the source, and means for circulating conditioned compressed air from the means for conditioning compressed air through the at least one core rod at the said one of the stations. Claim 28 further calls for means for blocking circulation of compressed air from the means for conditioning compressed air through the at least one core rod at the successive one of the stations. The means for circulating compressed air comprises means for

exhausting compressed air from the at least one core rod at the said one of the stations. The apparatus also comprises means for compressing compressed air exhausted from the at least one core rod and returning it to the means for circulating compressed air for conditioning by the means for conditioning to return the compressed air exhausted from the at least one core rod to the at least one core rod. The means for blocking circulation of compressed air does so by blocking the exhaust of spent conditioned air from the successive one of the stations.

Claim 28 was rejected as unpatentable over Gatti (4,668,177) in view of Martell et al. (4,955,504) and in further view of Gasmire (3,065,501) and Ikeda (5,817,348). Reconsideration of claim 28, now rewritten in independent form, is most respectfully requested.

Gatti ('177) discloses an injection blow molding machine including a turret 10 having three surfaces 11, each of which supports core rods 15. The core rods are moved successively, by rotation of the turret, first to a station A having parison molds 13 where the parisons are injection molded, then to a station B having blow molds where the parisons are blown to form the hollow articles, and finally to a station C where the hollow articles are removed. A coolant manifold 32 is provided on each surface 11 for distributing coolant to the core rods. However, the Examiner states, and applicant agrees, that Gatti "does not teach a source of compressed air and means to cool (condition) said compressed air using a pressure regulating means" (see lines 4-6 on page 3 of the last action).

Martell et al. ('804) is relied upon to provide this deficiency of Gatti. However, Martell et al. discloses a tool for molding plastic articles in a mold space 44. Molten plastic is fed to the mold space 44 by a feeder tube having a main body 26. The space surrounding the main body of the feeder tube receives air from a compressor 54. The air is cooled by an air chiller 58 controlled by controls 86, 88 to vary the temperature. However, Martell et al. does not relate to equipment for the injection molding of annular parisons (see the Martell et al. mold space 44) and therefore would not suggest a technique for cooling a core rod of the type used in the machine of Gatti

Claim 28 includes a further limitation, namely a means for compressing compressed air exhausted from the at least one core rod and returning the compressed air exhausted from the at least one core rod to the means for circulating compressed air for conditioning by the means for conditioning to return the compressed air exhausted from the at least one core rod to the core rod. Gasmire ('501) was cited with respect to this added limitation. Whereas, in Gasmire the reclaim unit 75 puts out compressed CO₂, it is submitted that there is no compression of exhausted air before it is returned for recirculation. In applicant's apparatus, on the other hand, the exhausted air is compressed by a compressor 46 before it is returned to line 20 for recycling.

The Examiner on page 11, lines 3 and 4 of this action, states that Gatti in view of Martell et al. and in further view of Gasmire do not teach means for

blocking the exhaust system. Ikeda ('348) was cited in connection with this limitation of applicant's claim 28. Ikeda discloses a blow molding machine having a blow air tank 21 for storing high pressure air, and a working air tank 22 for storing low pressure air. The high pressure air from the air tank 21 is used to blow mold an article into an expanded preform. The working air tank 22 is used to supply air to operate various drive units for molding an injection molded preform into a hollow product, such drive units including a vertically movable unit 1 for a blow core, an extending unit 2 for a stretching rod, a fixing unit 3, a releasing unit 4, and a positioning unit 5. In operation, the high pressure air from the blow air tank 21 is used for blow molding and expanding a preform. When the preform is properly blow molded, the selector valve 27 is closed and the selector valve 30 is opened causing high pressure air in the tank 21 to be collected and transmitted to the low pressure working air tank 22. The collected air in the working air tank 22 is used for some of the working air to operate the various units. There is nothing in Ikeda to suggest a means for blocking circulation of compressed air from the means for conditioning compressed air through the core rod at the successive one of the stations, wherein the means for blocking circulation does so by blocking the exhaust of spent conditioned air from the successive one of the stations.

The blocking of the circulation of compressed air by blocking the exhaust of spent conditioned air from the successive one of the stations is described on page 6, paragraph 1 of applicant's specification. There it is pointed out that air

flows to the inlet manifold at the injection molding station through a rotary union 56 that rotates with the turret 10 beneath a fixed cam plate 58 which carries a suspended cam 60. Cooling air flows into the core rods at the molding station through inlet lines 62, and after passage through the core rods 18, to the cooling air outlet manifold 54 through outlet lines 64. However when the cam 60 engages a limit switch at the parison blow station as depicted in FIG. 1, conditioned air is blocked from flowing into the cooling inlet air manifold 52 by blocking the exhaust of spent conditioned air from such station.

Claim 28 was also rejected as being unpatentable over Farrell (3,998,577) in view of Martell et al. ('804) and in further view of Gasmire ('501) and Ikeda ('348). Reconsideration of this rejection is most respectfully requested.

Farrell discloses a core rod 10 mounted on a rotatable indexing head 11 of an injection molding machine. The core rod 10 has an inner tubular surface 12b for cooling fluid flow. A hollow tubular member 15 is axially disposed within the core rod 10. An annular passageway is defined by the inner surface of the core rod and by the tubular member 15 for flow of a temperature control fluid. Farrell does not teach a source of compressed air and means to cool or condition the compressed air using a pressure regulated means.

Martell et al. ('804) is relied upon to provide this deficiency of Farrell. Martell et al. discloses a tool as described above in these remarks. However Martell et al. does not relate to equipment for the injection molding of annular parisons as

also pointed out heretofore, and accordingly would not suggest a technique for cooling a core rod of the type used in the machine disclosed in Farrell.

Gasmire, as used in this rejection of claim 28, does not appear to disclose any compression of exhausted air before it is returned for circulation. In applicant's apparatus the exhausted air is compressed by a compressor 46 before it is returned to the line 20 for recycling.

The Ikeda patent ('348) was cited apparently for its teaching of an exhaust system which allows improved process control. However, as stated hereinabove, there is nothing in Ikeda to suggest a means for blocking circulation of compressed air from the means for conditioning compressed air through the core rod at the successive one of the stations, wherein the means for blocking circulation does so by blocking the exhaust of spent conditioned air from the successive one of the stations.

Claim 28 was also rejected as being unpatentable over Farrell in view of Martell et al., and in further view of Ikeda and Gasmire. This is believed to be substantially the same rejection as considered in the foregoing although the position of Ikeda and Gasmire in the rejection has been reversed. In connection with this rejection, the Examiner has stated that Ikeda teaches an exhaust system that allows for improved process control, hence providing an improved apparatus. However whether or not that is true, it is submitted that there is nothing in Ikeda to suggest a means for blocking circulation of compressed air from the means for

conditioning compressed air through the core rod at the successive one of the stations, wherein the means for blocking circulation does so by blocking the exhaust of spent conditioned air from the successive one of the stations.

Claim 28 is also rejected as being unpatentable over Gatti in view of Martell et al., and in further view of Ikeda and Gasmire. This rejection is similar to one previously discussed although the position in the rejection of the references Ikeda and Gasmire has been reversed. It must be repeated that Ikeda, although it may teach a system for improved process control, does not teach a means for blocking circulation of compressed air from the means for conditioning compressed air through a core rod at a successive one of the stations, wherein the means for blocking circulation does so by blocking the exhaust of spent conditioned air from a successive one of the stations.

For the foregoing reasons, claim 28 is believed to be allowable.

Claim 29 is like claim 28 but omits the limitations of claim 28 appearing in lines 20-24 on page 8 of this amendment. Otherwise claim 29 is like claim 28. Thus claim 29 calls for the means for blocking circulation of the compressed air at the successive one of the stations, and states that such means for blocking does so by blocking the exhaust of spent conditioned air from the successive one of the stations. As pointed out above in connection with claim 28, this feature of applicant's invention is nowhere disclosed in the prior art including Ikeda and the other references of record.

Claim 30 depends from claim 29 and states that the means for conditioning comprises pressure regulating means for regulating pressure of the compressed air. New claim 31 depends from claim 29 and states that the means for conditioning comprises heater means for heating said compressed air. New claim 32 depends from claim 29 and states that the means for conditioning comprises cooler means for cooling the compressed air. New claim 33 depends from claim 32 and states that the cooler means comprises means for injecting a spray of water into said compressed air. Claims 30-33 are believed to be allowable along with claim 29 and also because of the novel additional limitations recited therein.

In view of the foregoing, this application is now believed to be in condition for allowance and such action is respectfully requested.

Please charge any fees associated with this submission to Account No. 15-0875 (Owens-Illinois).

Respectfully submitted,

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